ABSTRACT

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PERENCANAAN STRUKTUR GEDUNG BETON BERTULANG 15 LANTAI DENGAN METODE SISTEM GANDA (*DUAL SYSTEM*)

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Indonesia is one of the developing countries that continues to strengthen infrastructure development, one of which is buildings. Reinforced concrete is a composite/mixed material between concrete and reinforcing steel. The dual system will give buildings better load with standability, especially against earthquake loads. The purpose of this research is to obtain the dimensions, working drawings and value of the project budget plan costs from the structure of blocks, columns, plates, shearwall and foundations in buildings that have been designed. The results of the analysis showed from the interaction of the double system on the ground floor the percentage of earthquake load carried by the frame due to the EX earthquake (X) was 51.83% and the result of the EY (Y) earthquake was 65.96%. Frame has with standed more than 25% of the earthquake load (qualified as a double system) in accordance with SNI 1726-2019 Article 7.2.5.1, therefore the moment-hoe frame has been able to withstand the design earthquake force and continued with the analysis of repetition on structural components. Calculation for the dimensions of the structure of the building blocks obtained block B1 is 200/300 mm, beam B2 is 150/250 mm and beam B3 is 100/200 mm, while for the dimension of the column obtained column K1 is 600/1100 mm, column K2 is 500/900 mm and column K3 is 400/800 mm. Calculations for floor plate structure and shearwall obtained thick dimensions of two-way floor plate structure is 125 mm and for the thick dimensions of shearwall structure is 300 mm for P1 and P2. The calculation of the lower structure, known as the foundation of the building, is planned using a stake foundation 500 mm in diameter with a depth of 18 m. The needs of the foundation poles used based on the calculation obtained 2, 3 and 4 poles for columns and 5 poles for shearwall P1 and P2. The total Budget Plan Cost (RAB) of the structural components includes preparatory work, formwork work, repair work and concrete work obtained a total cost of Rp. 15,168,526,825.00.

Reference (2010 – 2020)